

## **Response**

### **A. Introduction**

Claims 1-14 remain pending in the application following entry of the preceding amendments. The Examiner objected to claims 4-5 and 12 because of their inclusion of the word “preferably” and initially rejected (1) claims 1-4, 8, and 13-14 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,147,754 to Theriault, et al., (2) claims 1-3, 7-8, and 12-14 under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,771,368 to Chadwick, and (3) claims 9-11 under 35 U.S.C. § 103(a) as unpatentable over the disclosure of the Theriault patent combined with a Wikipedia entry entitled “Plasma (Physics).” According to the Examiner, claims 5-6 would be allowable if appropriately rewritten.

### **B. Objection to the Claims**

Applicants do not concede the propriety of the Examiner’s objection as to claims 4-5 and 12. Nevertheless, for convenience Applicants have elected to revise these claims to delete all references to the word “preferably.” Applicants accordingly request that the Examiner’s objection be withdrawn.

### **C. Initial Rejections**

Independent claim 1 of the application relates to stand-off analysis of a chemical or biological warfare agent, reciting a method in which

- the sample is vaporized to produce a *vapor plume of molecular species*; and
- the *molecular emission spectra of the plume* is analyzed.

Independent claims 13 and 14 are similar in these respects, respectively referencing kits and apparatus for accomplishing these activities. According to the Examiner, these features of Applicants' invention purportedly are disclosed in the Theriault and Chadwick patents.

For *multiple* reasons this contention of the Examiner is *clearly incorrect*, however. By contrast with the present invention, those of the Theriault and Chadwick patents address laser-induced breakdown spectroscopy. Consistent with this technique, a laser beam focuses on a sample to produce a plasma in which components of the sample are broken down into *elemental species*. *Neither* cited patent thus teaches or suggests producing a *vapor plume of molecular species* as recited in claims 1 and 13-14.

Similarly, neither the Theriault nor the Chadwick patent contemplates analyzing *molecular species* within a vapor plume. Instead, light emitted by the plasma created using the techniques of the Theriault and Chadwick patents is composed of spectral lines characteristic of the *elements* present in the sample. By spectrally analyzing the emitted light, the elemental composition of the sample may be deduced. For at least this additional reason, independent claims 1 and 13-14 define subject matter patentable over these cited references.

Furthermore, the sample referenced in each of claims 1 and 13-14 is defined as comprising "one or more chemical and/or biological warfare agents *of low volatility*." *Nowhere* is such sample characteristic addressed in either the Theriault or Chadwick patent. Instead, the Examiner merely *assumes* this to be true, stating *without any support whatsoever* that the devices are "capable of analyzing any

sample of interest.” See, e.g., Office Action at p. 4. Applicants challenge this improper assumption of the Examiner and, for at least this third reason, request that the pending claims be allowed.

Finally, Applicants note that the pending claims relate to stand-off analysis, in which “neither an operator nor any element of instrumentation is co-located with [the] sample.” See Published Application at ¶ 0024. Accordingly, for example, claim 1 recites “means to enable [the analytical means] to receive . . . spectra for stand off analysis.” Because neither the Theriault nor the Chadwick patent addresses such stand-off analysis, *no* such means is disclosed or suggested in either of them. Applicants hence believe, for multiple reasons, that the Examiner’s initial rejections lack *prima facie* basis and request that the rejections be withdrawn.

### Conclusion

Applicants request that the Examiner allow claims 1-14 and that a patent containing these claims issue in due course.

Respectfully submitted,



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